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November 2, 1999

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FEDERAL COMMUNICATIONS COMMISSION
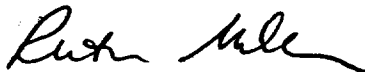OFFICE OF THE SECRETARY

BY HAND

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

> RE: Written Ex Parte Submission
> In the Matter of Deployment of Wireline Services
> Offering Advanced Telecommunications Capability
> <u>CC Docket No. 98-147</u>

Dear Ms. Salas:

Pursuant to section 1.1206(b)(1) of the Commission's rules, 47 C.F.R. §1.1206(b)(1), an original and one copy of the enclosed letter are being provided to you for inclusion in the public record of the above-referenced proceeding.

Sincerely,

Ruth Milkman

Enclosure

cc: Lawrence Strickling
Jane Jackson
Carol Mattey
Margaret Egler
Don Stockdale
Staci Pies
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November 2, 1999

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, SW – Room TW – A325
Washington, D.C. 20054

Re: Written Ex Parte Submission, CC Docket No. 98-147

Dear Ms. Salas:

This letter responds to the ex parte filings on Line Sharing submitted by Bell Atlantic on October 19, 1999 and Telcordia on October 21, 1999. Parts of those filings concern the impacts of Line Sharing on Operations Support Systems (OSSs) and specifically comment on my Statement, which was submitted in this proceeding on September 30, 1999 (Statement), on behalf of Bluestar Communications, Inc., Covad Communications Company, HarvardNet, Inc., Network Access Solutions, NorthPoint Communications, Inc., and Rhythms NetConnections, Inc.

Summary

The Bell Atlantic and Telcordia filings confirm our view that the majority of changes needed for OSS can be completed within six months. If necessary, manual workarounds can be used until the remaining OSS enhancements are completed, which Bell Atlantic estimates to be nine months. With respect to some matters, we are in agreement with Bell Atlantic and Telcordia. For example, we agree with Bell Atlantic that routine testing issues can be resolved by changes in methods and procedures, and do not require OSS changes. With respect to other matters, we continue to dispute Bell Atlantic's conclusions, in many cases because its conclusions are unsupported. For example, Bell Atlantic's claims with respect to time delay and cost continue to be unsubstantiated. Bell Atlantic does not explain the nine-month delay, and does not rebut our explanation for the conclusion that OSS can be modified more promptly. Third, Bell Atlantic and Telcordia continue to focus only on flow-through provisioning. In today's world, all CLEC orders for DSL capable loops from Bell Atlantic are handled manually. We have demonstrated that a GUI-based, non-flow-through process could

be implemented promptly, and, if it provides parity, would be considered compliant until all OSS enhancements are complete.

1. Ordering Shared Loop

Bell Atlantic agrees with MTG that the ordering and preordering processes need additional development to provide flow-through capability in a mass-market environment. Bell Atlantic asserts, without further justification, that "manual workaround[s] [are] simply not feasible," and that the development effort would require about nine months.[1]

Manual workarounds have been used often in the early stages of telecommunications deregulation, including for inter-LATA long distance, local number portability, and local exchange services competition. Assuming limited order volumes for line sharing that are typical of ramp-up situations, we believe that manual workarounds for line sharing would be feasible, at least for an interim period.

A combination of manual workarounds and a GUI-based non-flow-through process can be implemented in significantly less than 9 months for two reasons. First, the significant functionality already in use for UNE pre-ordering and ordering functions provides a strong base to which only incremental changes are needed. Secondly, Bell Atlantic's own past performance making OSS modifications indicates that its current estimate of nine months is too pessimistic.

Stuart Miller, on behalf of Bell Atlantic, in his affidavit to the Massachusetts Department of Telecommunications and Energy on OSS capabilities in support of the company's 271 application states: "The Web GUI, which has been available from BA-MA since October 1996 for Resale and January 1997 for UNEs, provides Competing Carriers with the same functionality available to BA-MA retail employees using graphical user screens, displayed directly on their desktop computers, to enter and send requests to, and review responses from, BA-MA's OSS."[2] The Web GUI was developed in response to the FCC's First Local Competition Order[3] released on August 8, 1996 and the Second Order on Reconsideration[4] released on December 13, 1996 in order to provide access to OSS for unbundled network elements. In other words, Bell Atlantic needed less than six months to design and implement an entirely new GUI for access to UNEs. In light of that performance, it would appear reasonable to expect Bell Atlantic to make relatively minor changes to an existing OSS in less than three months, and certainly well within six months.

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[1] Bell Atlantic ex parte, October 18, 1999, MTG ILEC Concern #1.

[2] Stuart Miller Affidavit of 5/17/99 page 5 paragraph 9

[3] First Report and Order, FCC 96-325 (released 8/6/96)

[4] Second Report on Reconsideration, FCC 96-476 (released on 12/13/96)

Flow-through processing of line sharing orders is a goal that is mutually beneficial to all ILECs and CLECs. However, it is not currently, nor has it ever been, a pre-requisite to the placement of orders by CLECs when manual and GUI options can be used as an interim process. One of the key determining factors as to the feasibility of using manual workarounds for an extended period of time is the volume that is expected to be experienced. Since manual work-arounds for line sharing will only be required in the short term during the lower volume ramp-up period, they appear feasible. We agree with Bell Atlantic that manual work-arounds are not feasible as a long-term solution, as they are too resource-intensive for both competitive and incumbent LECs to sustain permanently.

Once the manual workarounds and GUI-based processing is in place, Bell Atlantic could pursue its flow-through processing capabilities that it estimates will require nine months to complete. Neither Bell Atlantic nor Telcordia provided details on the nature of the development sufficient to assess the appropriateness of the nine-month time frame.

2. Provisioning Two Services On The Same Loop

Both Bell Atlantic and Telcordia imply that MTG suggested that Digital Added Main Line (DAML) and, in Telcordia's case, Universal Digital Carrier (UDC) as workable solutions for line sharing. This implication is plainly wrong. MTG did not suggest DAML or UDC as a model for a line-sharing solution; rather we suggested they "involve inventorying multiple services on a single loop and represent strong analogies to Line Sharing."[5] We acknowledged that "additional codes similar to those used with UDC and [ILEC-provided] ADSL" would be needed. Our reference to DAML and UDC was to show that ILECs and their OSS vendors have developed several ways of provisioning, inventorying, and managing two services on the same loop.

In further comments with regard to the "two services on one loop" point, Telcordia states "All assignment algorithms for unbundled elements in LFACS and the SWITCH system assume only two end points: the customer and the meet point for unbundled loops and sub-loops, the meet point and a switch port for switch unbundling." Bell Atlantic[6] makes a similar point when it asserts that "existing assignment systems (LFACS/SWITCH) cannot accommodate line sharing without enhancement to establish a Meet Point (CFA-like for splitter assignment and associated terminations) and leave the voice line intact." Bell Atlantic in its response to the MTG filing makes the statement that[7] "BA ADSL orders can flow through BA's provisioning OSS." In order for this flow-through provisioning to correctly assign facilities, including Meet-Points, one can

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[5] MTG filing 9/30/99 at p. 19

[6] Bell Atlantic filing in response to MTG, Concern 2

[7] Bell Atlantic filing in response to MTG, Concern 2

infer that the assignment algorithms already implemented in Bell Atlantic's OSS can support, in an automated fashion, three end points for its own ADSL services that share a line - the customer end point, the splitter end point, and the switch port end point). Since this challenge is similar whether it is a Bell Atlantic shared line or a CLEC-ILEC shared line, the need for a solution is already driven by Bell Atlantic's needs and the solution it used for itself could be adapted to support the incremental needs of CLEC-ILEC line sharing.

It appears that Telcordia has developed for Bell Atlantic a workable ILEC-ILEC line sharing solution that is different, and possibly better, in its implementation than MTG's suggestion. Telcordia should be applauded for this, as the important fact is the solution, not the design details. There is a spectrum of functionally similar solutions for provisioning line sharing and OSS vendors will undoubtedly differ in their design details. Telcordia's solution may be appropriate for both its own business strategy as well as the strategies of its customers using its embedded base of legacy systems. Since Telcordia has determined that modeling xDSL services as a single service for provisioning purposes is more appropriate than tracking it as two services, MTG accepts that as a reasonable approach. Regardless of the business and implementation details, the solution should be applicable to CLEC-ILEC line sharing as well as to ILEC-ILEC line sharing.

Bell Atlantic has recently added flow-through processing capability for its own xDSL orders. This newly implemented capability means that Bell Atlantic has even fewer modifications to make than do other ILECs to accommodate flow-through processing for CLEC-ILEC line sharing. In order to introduce this capability, they have established the core systems infrastructure, including assignment algorithms and service tracking capabilities, needed to provide flow-through provisioning. In doing so, some of the same problems associated with CLEC-ILEC line sharing, such as identifying two services on one line (whether tracked as one logical unit or two) and accommodating multiple end points as discussed above, have been at least partially, and more likely totally, addressed to support flow-through processing of Bell Atlantic's own ADSL orders. This means fewer modifications and/or less complex modifications are required to its OSS to incrementally address line sharing than if had not already done some of the development for its own needs.

Our conclusion that basic changes for line sharing could be done in less than six months is further bolstered by an ex parte presentation to the FCC[8] where SBC/Ameritech commit the merged entity to "provide such line sharing ... beginning not later than 3 months and completing within 12 months after (a) and (b) listed above have occurred." This implies clearly that SBC/Ameritech and their OSS suppliers, including Telcordia, have either begun such development work or have confidence that the development effort is moderate.

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[8] "Proposed Conditions for FCC Order Approving SBC/Ameritech Merger", July 1, 1999, p. 19, paragraph 33.

3. Tracking Two Addresses, Customers, And Service Providers On One Loop

Telcordia states[9] that the addition of a "new data element for DLEC identification would have widespread impact within each OSS." This statement might be true if an entirely new DLEC identification element must be created, but it appears to ignore the possibility of using existing elements, such as Uniform Service Order Codes (USOCs) and Field Identifiers (FIDs) to identify the DLEC.

Bell Atlantic makes the point[10] that retail services such as ADSL "appear in the provisioning and assignment systems as one record in telephone number format." Bell Atlantic goes on to state that "new USOCs/FIDs would be required to facilitate the tying of the required voice and line sharing records together." The widespread proliferation of USOCs/FIDs is evidence that these functionalities are neither hard to create nor difficult to incorporate into existing OSSs.

As was the case with regard to point 2, in its design and implementation, Telcordia implies that a circuit record with an embedded telephone number (TN) is the only function that can be used to track and manage shared lines. There are, however, other records with embedded circuit numbers. It is feasible to use one record, say the TN-format record, to track the POTS portion and a circuit number-format record to track the data portion of the service. There are ways to "link" these two records so that the functional equivalent is a logical record that enables the ILEC to manage two addresses, customers, and service providers on one loop. It should be noted, that in the typical case of CLEC-ILEC line sharing there will only be one address just as with ILEC-ILEC line sharing. Telcordia may have chosen to have a single circuit record with a telephone number format rather than two cross-referenced records, one of which is in TN format and the other in circuit number format. To imply that provisioning systems are absolutely constrained by such design considerations is to ignore the possibility of using existing data elements in creative ways to "facilitate tying of the required voice and line sharing records together. The chosen solution should be modified to accommodate CLEC-ILEC line sharing requirements.

4. Notifying Both The CLEC And POTS Customer Of Problem On Loop

Bell Atlantic states that "Trouble report tracking OSSs and cooperative CLEC/ILEC M&Ps will need to be developed/modified to recognize that the loop for BA voice customer has line sharing applications and will require special handling for maintenance and repair." [11]

There are issues regarding trouble identification and resolution, but they are primarily ones of methods and procedures and could be expeditiously resolved given a good faith

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[9] Telcordia ex parte 10-21-99 at p. 3

[10] Bell Atlantic filing response to MTG Concern 3

[11] Bell Atlantic filing response to MTG Concern 4

effort on the part of all parties concerned. Bell Atlantic's reference to development/modification of trouble report tracking OSSs does not provide sufficient detail to assess the significance of its claim. However, estimates provided by U S West on this topic can serve as a useful proxy. In its recent filing on this same subject, U S West estimated that repair systems could be modified to support line sharing for between $80,000 and $100,000[12]. Since in some cases, the systems used by U S West and Bell Atlantic are essentially the same OSS from the same vendor, this estimate could be representative of most or all of the repair OSS changes needed for line sharing.

5. Performing Routine Automated Testing Without Disrupting Other Service

As Bell Atlantic states, routine testing is more an issue of methods and procedures than OSS capabilities. Bell Atlantic does not challenge our finding that "The level of effort related to ILEC OSS in this area is low."[13] MTG is in agreement with Bell Atlantic that testing arrangements should be part of the service definition.

6. Number Of Trouble Tickets

MTG agrees with the Bell Atlantic statement that "volume of trouble tickets is not an issue.[14] We came to that same conclusion in our statement filed on September 30, regarding concerns[15] expressed by U S West that "service providers would need to develop new processes to avoid the issuance of two repair tickets for a single problem." Bell Atlantic, in saying that there is "currently no capability to track a circuit trouble ticket with a voice trouble ticket in trouble report systems"[16] seems to assume MTG's proposed "two-record" solution as described in point 2 above. If however, Bell Atlantic tracks trouble for voice and data in a unitary way, its objection is moot. Presumably Bell Atlantic is able to track and correlate voice trouble reports and data trouble reports for its own ADSL customers. Development of a correlation procedure for ILEC and CLEC testing is one primarily of method rather than systems development.

7. Repair And Maintenance Issues

Bell Atlantic states that 'Because at a minimum two carriers will be providing two different end-user services to the same end-user customer, report generation, tracking, testing and closeout will require cooperation between the ILEC and the CLEC. In order to avoid finger pointing, well documented, proven

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[12] U S West ex parte 10/7/99 at p. 22 of Barbara Brohl's presentation

[13] MTG filing 9/30/99 at p. 29

[14] Bell Atlantic filing response to Concern 5

[15] U S West 7/22/99 at p.26

[16] Bell Atlantic filing response to Concern 6

processes and complementary OSS capabilities must be carefully developed. Existing OSS capabilities do not address this situation and need modification."[17]

The issues raised by Bell Atlantic with regard to repair and maintenance are the same types of issues that get addressed every day with both UNEs and long distance service providers. These are not new issues requiring extensive modifications of OSSs to support. While modifications may be required, they are hardly extensive or expensive, as confirmed by U S West's estimate[18] of a total of $80,000 to $100,000 to modify their repair process to accommodate line sharing. (This is the same cost estimate referred to in point 4, above.)

8. No way to bill both customers on one loop

Bell Atlantic agrees with MTG that new billing codes will be required for line sharing. It asserts, without any further evidence, that its ADSL billing arrangement " does not and can not accommodate CLEC use of loops."[19] Having made this assertion, Bell Atlantic does not attempt to quantify the effort of work to accomplish any needed modifications. We can, however, use U S West's estimate of $80,000 to $100,000[20] for billing OSS modification as a useful surrogate to conclude that the effort is not extensive. (This estimate is specifically for billing related OSS and is in addition to the $80,000 to $100,000 for repair and maintenance related OSS previously discussed under points 4 and 7.)

In summary, we would like to make the following points regarding the Bell Atlantic and Telcordia filings:

- Bell Atlantic states that its OSS does have the capability to support "flow-through" of ADSL orders, but provides no additional information on what the network facilities are that are managed by this "flow-through" capability. For example, Bell Atlantic does not mention if its systems are managing splitters either as stand alone devices or integrated within the DSLAM. Telcordia's filing sheds no additional light on this topic. This is a key point, since Bell Atlantic[21] claims that "existing systems (LFACS/SWITCH) cannot accommodate line sharing without enhancement to establish a Meet Point (CFA-like for splitter assignment and associated terminations) and leave the voice line intact." If we assume that Bell Atlantic must be using splitters when it offers voice and data over a single line, then its new

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[17] Bell Atlantic filing in response to MTG Concern 7

[18] U S West ex parte 10/7/99 at p. 22 of the Barbara Brohl's presentation

[19] Bell Atlantic filing in response to MTG Concern 8

[20] U S West ex parte 10/7/99 at p. 22 of Barbara Brohl's presentation

[21] Bell Atlantic filing in response to MTG Concern 2

capability must be managing the splitter assignments for Bell Atlantic, and therefore the same capability should, without any significant problem, manage the assignments for a CLEC.

- Bell Atlantic has not provided any specific scope or magnitude of effort estimates to support their claims that OSS' need to be changed/modified, other than to say that it would take about "9 months to implement". Its past performance on similar modifications such as the Web GUI indicates that it can be done in significantly less time.

- Bell Atlantic also rejects any suggestions of manual workarounds in the context that only flow-through is acceptable. We do not believe that flow-through provisioning is a pre-requisite to CLEC-ILEC line sharing, just as it was not a pre-requisite to ILEC-ILEC line sharing. Bell Atlantic has only recently added that capability for its own ADSL orders. Assuming reasonable order volumes, manual workarounds may be feasible.

Respectfully submitted,

Dennis J. Austin

Telcordia Technologies

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Washington

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An SAIC Company

October 21, 1999

Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, SW – Room TW-A325
Washington, D.C. 20554

Re: Ex Parte – Comments on Line Sharing Issues (CC Docket No. 98-147)

Dear Ms. Salas:

On September 30, 1999, several competitive local exchange carriers[1] (CLECs) that offer digital subscriber line (DSL) services submitted an ex parte prepared by the Maxim Telecom Consulting Group (MTG) including a Statement from Dr. Dennis J. Austin. (MTG) in the above-referenced docket. The MTG paper contained opinion and analysis on line sharing matters generally, and on a Telcordia-proposed OSS line sharing solution specifically. Telcordia is intimately familiar with the existing operations support systems in the public switched network and, specifically, the SWITCH®, LFACS, SOAC, TIRKS®, NSDB and WFA/C Telcordia-owned systems referenced in the filing. Based on our extensive knowledge of our own systems, we believe the MTG paper contains some inaccuracies regarding Telcordia's proposed OSS solution and about the public switched network. In an effort to edify the Commission and to provide accurate technical information on the record, set forth below is our Response which identifies the nature of the MTG inaccuracies.

Telcordia has developed or is currently developing solutions for xDSL (including support for both central office and remote DSLAMs), loop unbundling, switch unbundling and subloop unbundling. These solutions involve numerous OSS products including SOAC, LFACS, the SWITCH® system, NSDB and WFA/C and are designed to provide flowthrough service activation using mass market flows as well as to support service assurance activities for our ILEC customers. The Telcordia line sharing solution, while building on these other solutions, requires significant additional functionality.

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[1] Bluestar Communications, Inc., Covad Communications Company, HarvardNet, Inc., Network Access Solutions Corp., NorthPoint Communications, Inc., and Rhythms NetConnections, Inc.

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The enhancements to Telcordia OSSs to support a mass-market line sharing solution are not "minimal" as the MTG paper indicates.

1. Inventorying and assigning two services on the same loop

A key issue is inventorying and assigning two services on the same loop. MTG refers to three Telcordia OSS capabilities – universal digital carrier (UDC), digital added main line (DAML), and ADSL services – and erroneously indicates that "ILECs could easily use these existing capabilities to inventory services on a shared line."

- **UDC model**

  The UDC model uses derived pairs to identify each logical channel associated with a digital loop carrier system. Using this model for line sharing would require every copper pair to be established as a carrier system to obtain flowthrough service activation. This strategy would require massive OSS upgrades since, to cite a couple of examples, (1) the assignment algorithms would have to be enhanced for all services using copper facilities and (2) the UDC model does not maintain the relationship of the derived cable pairs to the underlying copper pair and knowledge of the copper pair is required for many activities (e.g., work instructions). A massive conversion effort would also be required to transition the existing copper to the new model in LFACS, the SWITCH system, NSDB, the TIRKS system and many others that retain loop information.

- **DAML model**

  The DAML model does not provide any automatic assignment when the DAML equipment is initially placed on a line. Every service order requiring a DAML placement falls out of the automated processing flow and generates a request for manual assistance (RMAs). Users must then manually build all the necessary derived inventory before service order processing can continue. This process has not been automated due to the extremely high development impact involved in creating inventory as part of the service activation process.

  Without enhancements, using the DAML model for line sharing would require extensive manual activity. Since a splitter would be needed for each line sharing assignment, the initial service order requesting line sharing would always generate a RMA and the user would be required to build the derived inventory manually. If the service order were later cancelled, the user would have to delete the derived inventory manually if the splitter had not already been wired in the field.

  Significant enhancements would still be required to assignment algorithms to select these new derived pairs for line sharing since the assignment of these derived pairs is not independent. If one derived pair is assigned to a voice service, then the other derived pair must be assigned to a data service for the same customer. No such constraints exist in the DAML model today.

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- xDSL Model

    In the Telcordia xDSL solution discussed in the MTG paper, xDSL service is modeled as a -single service providing both voice and data and requiring the assignment of a DSLAM port. Contrary to what MTG suggests, neither LFACS nor the SWITCH system maintains two derived pairs for xDSL service. Administration and management of voice and data service are not separable nor are they independent. To use the xDSL model for line sharing, all service orders for data service on a shared loop would have to reflect the voice service and vice versa. Significant enhancements would still be needed to Telcordia OSSs:

    o   The service order would need to contain additional information (USOCs, FIDs) to uniquely identify line sharing, which SOAC would need to process and pass to downstream OSSs. New USOCs/FIDs are necessary, but not sufficient, to provide support for line sharing. Provisioning algorithms must also be developed to support any unique requirements of that service.

    o   Existing LFACS and SWITCH assignment algorithms for xDSL service would require enhancements to include assignment to the meet point specified by the data LEC (DLEC). All assignment algorithms for unbundled elements in LFACS and the SWITCH system assume only two endpoints: the customer and the meet point for unbundled loops and subloops, the meet point and a switchport for switch unbundling. Line sharing service would have three endpoints: the customer, the meet point and the switchport.

None of the strategies suggested by MTG could be implemented without significant impact, especially if parity is to be achieved with an ILEC's own xDSL service and line sharing service requested by a DLEC.

2. Tracking two service providers for the same loop

DLEC information would need to be retained in multiple Telcordia OSSs (LFACS, SWITCH system, NSDB and WFA/C) to support plant rearrangements, maintenance activity and any needed DLEC/ILEC coordination. The required changes are pervasive. The addition of a new data element for DLEC identification would have widespread impact within each OSS. For example, LFACS and SWITCH system enhancements would include modifications to automatic assignment processing, manual assignment processing, inventory, inquiries/reports, maintenance change processing and batch processes.

In conclusion, Telcordia believes the Response above will be helpful to the Commission in understanding the technical issues of how line sharing impacts the public switched network.

Pursuant to Section 1.1206(b)(1) of the Commission's rules, 47 C.F.R. Sec. 1.1206(b)(1), an original and a copy of this Response are being provided to you for inclusion in the public record of the above-referenced proceeding.

4

If you have any questions about the substance of this response, please contact either Michael Knapp (202/776-5454) or the undersigned.

Sincerely,

Louise L.M. Tucker
Senior Counsel
Washington

cc: Dorothy Attwood   Stagg Newman
       Rebecca Beynon   Vincent Paladini
       Pat DeGraba   Bob Pepper
       Kyle Dixon   Staci Pies
       Margaret Egler   Howard Shelanski
       Dale Hatfield   Don Stockdale
       Jane Jackson   Lawrence Strickling
       Linda Kinney   Sarah Whitesell
       Carol Mattey

LAWLER, METZGER & MILKMAN, LLC

October 19, 1999

BY HAND

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

> RE: Written Ex Parte Submission
> In the Matter of Deployment of Wireline Services
> Offering Advanced Telecommunications Capability
> <u>CC Docket No. 98-147</u>

Dear Ms. Salas:

Pursuant to section 1.1206(b)(1) of the Commission's rules, 47 C.F.R. §1.1206(b)(1), an original and one copy of this letter are being provided to you for inclusion in the public record of the above-referenced proceeding.

Sincerely,

Ruth Milkman

cc: Carol Mattey
      Staci Pies
      Vincent Paladini

October 19, 1999

Magalie Roman Salas, Secretary
Federal Communications Commission
445 Twelfth Street, SW – Room TW – A325
Washington, D.C. 20054

Re: Written Ex Parte Submission, CC Docket No. 98-147

Dear Ms. Salas:

This letter responds to the ex parte filing on Line Sharing submitted by U S West on October 7, 1999. Part of that filing concerns the impacts of Line Sharing on Operations Support Systems (OSSs) and specifically comments on my Statement, which was submitted in this proceeding on September 30, 1999 (Statement), on behalf of Bluestar Communications, Inc., Covad Communications Company, HarvardNet, Inc., Network Access Solutions, NorthPoint Communications, Inc., and Rhythms NetConnections, Inc.

The U S West response includes what appears to be a more detailed description of potential impacts of Line Sharing on US West's OSS than was done for its previous filings in this proceeding. The Line Sharing Impact Assessment on pages 30 to 34 of the filing identifies each OSS and makes a brief statement about the potential modifications needed for each. Examples of the descriptions provided include for the Service Order Analysis and Control (SOAC) system on page 30, "Enhancements to accept shared line orders and manage the service order flow." and for the Work and Force Administration and Control (WFA-C) system on page 31, "Table Work for proper dispatch and workflow." These descriptions are quite general, making it difficult to discern the specific basis for the high estimated costs that appear on page 37.

In its October 7, 1999 filing, U S West concludes that the OSS modifications for Line Sharing are not as far-reaching, invasive and costly as claimed in its earlier filing dated July 22, 1999. For example, in the July 22, 1999 filing, it claimed that "U S West would be required to redesign and rewrite all of its billing systems, at enormous expense, to deal with the fact that two customers would be associated with a single loop." In its October 7, 1999 filing, US West estimates the cost to modify its billing systems to be between $80,000 and $100,000. Other examples are summarized in the attached Table 1.

We believe that U S West's most recent filing supports many of the findings and conclusions submitted in my Statement . However, we would like to address the following points:

1. Manual processing of line sharing orders can be done almost immediately. It is my understanding, based on statements made in various public meetings, that all U S West orders for its own ADSL service are processed with manual procedures, rather than flow-through provisioning. If U S West can do manual processing for its own ADSL orders, it surely can process ADSL orders from CLECs on shared lines using manual processes.

2. Since U S West is working towards flow-through processing and provisioning for all orders, including its own ADSL orders, the question then becomes one of parity. When flow-through processing and provisioning becomes available for its own needs, that OSS capability should also be made available for CLEC line sharing orders at the same time.

3. Many of the OSS changes described in the U S West filing as required for line sharing appear to be changes that would be needed by U S West to support its own flow-through processing and provisioning requirements. For example, the US West submission contains separate diagrams that depict network configurations for providing DSL service to its own retail customers over a shared line (p. 8) and for providing access to line sharing to competitive LECs (p. 11). The major difference between the two diagrams is the presence of an Interconnection Distribution Frame (ICDF) on the page 11 diagram. The diagrams are otherwise very similar and represent almost identical configurations that support the two different services. The ICDF appears to be a variation of intermediate distribution frames (IDFs) which have been widely deployed in central offices in the past for many existing applications. Since OSSs already accommodate IDFs, it is not clear what change is needed or if it is a requirement that is attributable to only CLEC-ILEC line sharing.

4. The cost estimates of $2.6 Million to $4.1 Million for modifying the provisioning/installation OSS appear to be high when considering that U S West needs some of the same functionality for its own flow-through order processing and provisioning. It is unclear whether this is an allocation for just the incremental cost of line sharing or the total for all of the functionality changes. In addition, many of the OSSs involved, such as Loop Facilities Assignment and Control System (LFACS), are provided by the same vendor and used by several ILECs so there should be economies due to scale and proration of common elements that do not appear to be reflected in U S West's cost estimates. These same concerns apply to the cost estimates of $700,000 to $1,200,000 for ordering OSS such as SOAC.

In summary, it appears that U S West agrees with my Statement that the functional OSS structure exists to accommodate line sharing and that in many cases it is only a matter of updating tables, business rules, assignment locations and codes to activate an inherent functionality. That view is consistent with the findings and conclusions described in my Statement. Should line sharing be ordered, U S West could immediately implement manual processing with the workarounds described in my Statement the affidavit (or similar ones), until the relatively minor permanent changes are completed.

Respectfully submitted,

Dennis J. Austin

Attachment

Table 1 - Summary of U S West's Estimated Impacts on OSS

U S West's 7/22/99 Estimates[1]	U S West's 10/7/99 Estimates[2]	Comments
Ordering – " U S West would have to undertake significant development work to implement new ordering…"	Now estimates that Ordering OSS changes will cost from $700,000 to $1,200,000 to accommodate line sharing	Not clear if estimates reflect only incremental line sharing costs and efficiencies due to scale and proration of common elements to all ILECs requiring similar modifications for their own needs and line sharing needs.
Installation - "Enormous development work would be required to process …"	Now estimates that changes to provisioning OSS will cost from $2,640,000 to $4,100,000 to accommodate line sharing	This estimate appears to be overstated when you consider that U S West will need much of the same functionality to process its own ADSL orders on a flow-through basis. It would help to know if this is the total cost of the incremental cost associated with processing CLEC line sharing orders only. In addition, does this estimate reflect the economies of scale and proration of common elements?
Maintenance and Repair - " U S West would have to redesign its repair systems as a result of line sharing."	Now estimates that changes to Repair OSS will run from $80,000 to $100,000	Several appear to involve only table updates.
Billing – "Incumbent LECs would have to engage in major overhauls of billing systems as a result of a line sharing requirement. US West would be required to redesign and rewrite all of its billing systems, at enormous expense to deal with the fact that two customers would be associated with a single loop."	Now estimate that changes to Billing OSS will run $80,000 to $100,000 to accommodate line sharing	Only one of the two Billing OSS is impacted with what seems a minor change to bill for the shared line charges.

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[1] Reply Comments of U S West Communications, Inc. 98-147 dated 7/22/99 at page 26

[2] Ex Parte filing of October 7, 1999 at page 37

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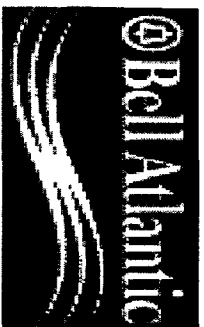
Line Sharing

October 18, 1999

@ Bell Atlantic

Line Sharing

AGENDA

- CLEC Coalition OSS Study Exparte (9/30/99)

- Development And Deployment Of Line Sharing

- Issues
  - Service Quality
  - Costs
  - Timing

- Recommendation

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The CLEC Coalition OSS Study Is Fatally Flawed

- Based On Incorrect Assumptions:

    CLEC-ILEC Line Sharing **Is Significantly Different** From Both:
    - BA's ADSL Service
    - BA's UNE Offerings

- Ignores Traditional Development Processes And Required BA/CLEC Change Management Process

- Disregards Customer Impacting Service Quality Issues

The Bottom Line -
The Study's Proposed 2-4 Week Implementation Is Unrealistic and Operationally Flawed

CLEC-ILEC Line Sharing Is Different From BA's ADSL Service And UNE Service Offerings:

From A Service Architecture Perspective

- A New Network Component - The Splitter
    - Design: Placement In Network, Type/Specifications, CLEC Access/DSLAM Compatibility, Testing Arrangement
    - Deployment: Procurement, C.O. Engineering, Installation, Inventory
    - Assignment: Wiring, Management

- Two Carriers Using Spectrum On The Same Loop

CLEC-ILEC Line Sharing Is Different From BA's ADSL Service And UNE Service Offerings:

From A Process Perspective

• BA Providing Two Different Services Over The Same Loop To Two Different Customers:

      (a) Line Sharing To CLEC; and,(b) Voice To The End-User

• Process Modifications To Accommodate the Splitter, Paired Service Offerings (ILEC Voice and CLEC ADSL), ILEC/CLEC Coordinated Maintenance, Testing, & Repair, And New Billing Processes

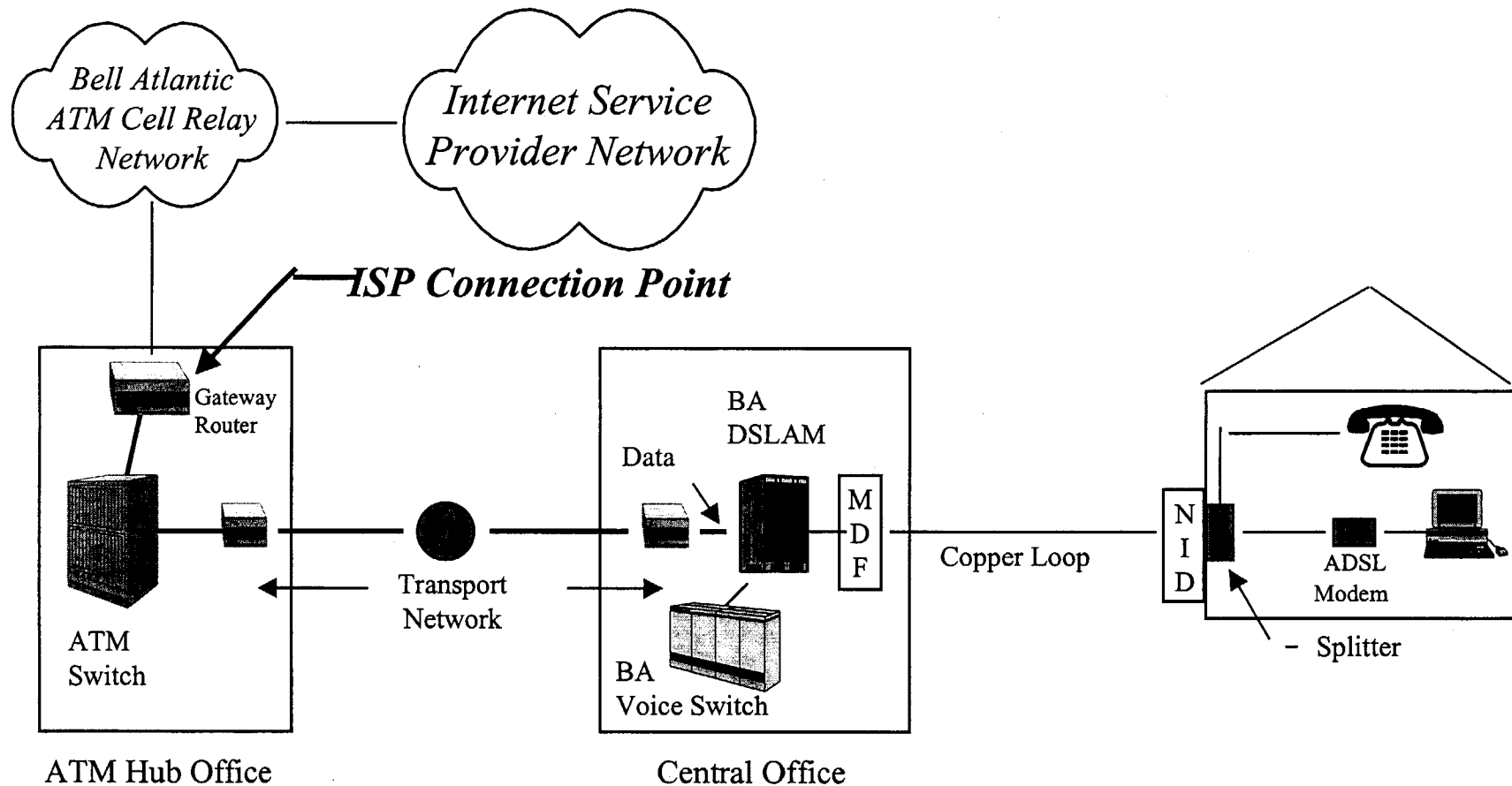# CLEC-ILEC Line Sharing Is Different From BA's ADSL Service And UNE Service Offerings:

From A Customer Care Perspective

- Two Carriers (Some Cases Three Providers) Involved In Providing Two Different "Retail" Services To The Same End-User Over The Same Loop

- Line Sharing Service Option Is Conditioned Upon BA Provision of Voice Service

- Service Provisioning, Testing, And Maintenance Requires ILEC/CLEC Coordination

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Volume/Term ISP Arrangement

Bell Atlantic ATM Cell Relay Network

Internet Service Provider Network

ISP Connection Point

Gateway Router

BA DSLAM

Data

M D F

Copper Loop

N I D

ADSL Modem

Transport Network

ATM Switch

BA Voice Switch

Splitter

ATM Hub Office

Central Office

NID - Network Interface Device

MDF - Main Distribution Frame

Line Sharing Arrangement

DLEC Connection Point

Collocation Cage

DLEC Data Network

DLEC DSLAM

P O T

C.O. Splitter

M D F

BA Voice Switch

Central Office

Shared Spectrum

Copper Loop

N I D

ADSL Modem

Splitter

NID - Network Interface Device

MDF - Main Distribution Frame

POT - Point of Termination
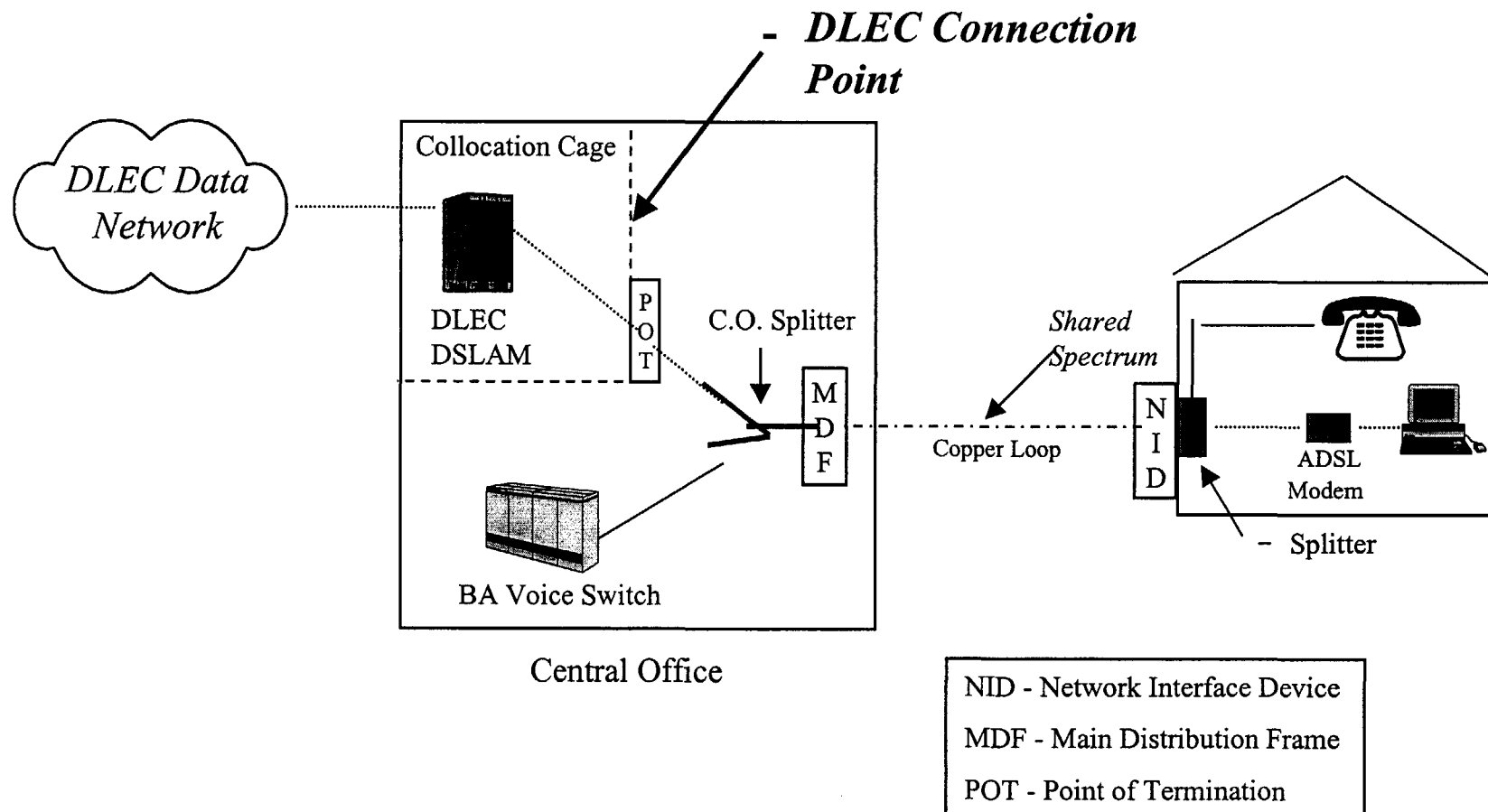
Comparison of Volume/Term
ISP Arrangement and Line Sharing

	Volume/Term ISP Arrangement	Line Sharing
Architecture	BA provides DSLAM, interoffice transport, ATM switching & aggregation	DLEC provides DSLAM in collocation space of serving office
Connection Point	ISP connects to BA at Gateway Router (ATM Network)	DLEC accesses physical loop at serving office
Services	ISP provides services to end customer over BA's ADSL infrastructure	DLEC can offer variety of xDSL services within assigned spectrum
Splitter	C.O. splitter located in BA DSLAM	External splitter near MDF
OSS Impact	*LOW* - BA maintains control of the loop and generates aggregate billing to ISP	*HIGH* – BA must modify OSSs to inventory/assign DLEC spectrum and external splitters
Provisioning	BA provisions DSL service from the NID to ISP connection	DLEC provisions data services from the NID to Collocation Cage
Maintenance & Testing	BA responsible for testing & trouble isolation of all network facilities that impact ADSL service	DLEC is responsible for data testing and trouble isolation/referral to BA's network

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Process And Systems Sharing Requirements

Pre-Order/Order Processing

• Establish Pre-Order Query Capability For Line Sharing: Splitter assignment/ Availability, Service Compatibility, And Accounts/Services Relationships [LiveWire]

• Define Business Rules For Ordering Line Sharing And Pairing With BA Voice Service

• Modify CLEC Facing Processes To Accept Line Sharing LSRs [GUI/EDI]

• Using Telecordia Industry Process Establish/Assign New USOCs, FID, Service Codes To Distinguish Line Sharing From BA ADSL Service

• Modify Service Order Systems For Line Sharing To Appropriately Feed Downstream Legacy Systems: Splitter Assignment/Wiring, Circuit Management,, Billing, etc [SOP, SOAC]

• Modify Account Management Systems To Accommodate Line Sharing And Pair With Voice and Line Sharing Service [CRIS]

Provisioning
- Inventory And Assign Splitters and MDF Cross Connections [Switch, LFACs]

- Establish Line Sharing Circuit And Maintain Voice Circuit On Same Loop

- Work Force And Repair Processes Need To:
    - Distinguish Between BA's ADSL Service And Line Sharing
    - Accommodate Two Records On The Same Facility
      [WFA, LMOS]

Repair
- Accommodate Two Records On The Same Facility In Trouble Report System [LMOS]

- Establish Testing Procedures To Accommodate Line Sharing (LMOS/MLT)

- Develop Customer Care Procedures And Testing Procedures To Accommodate Line Sharing

Billing
- Establish Capability To Bill End User And CLEC

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Service Quality Issues

Line Sharing Will Introduce Testing, and Repair Issues

• Two Carriers Sharing The Loop To Provide Two Different Services Introduces New Complexities

• Close ILEC/CLEC Coordination Will Be Required To Maintain Service Quality Or Consumers Will Suffer

• Processes and OSSs Must Be Thoroughly Tested Before Line Sharing Is Introduced To Assure Seamless Transition To End Users

## Maintenance and Repair Considerations - Consumer Impacts

Bell Atlantic ADSL

CPE	Loop	Voice Switch	DSLAM	ATM/Routers	ISP
Customer	←	ILEC		→	ISP
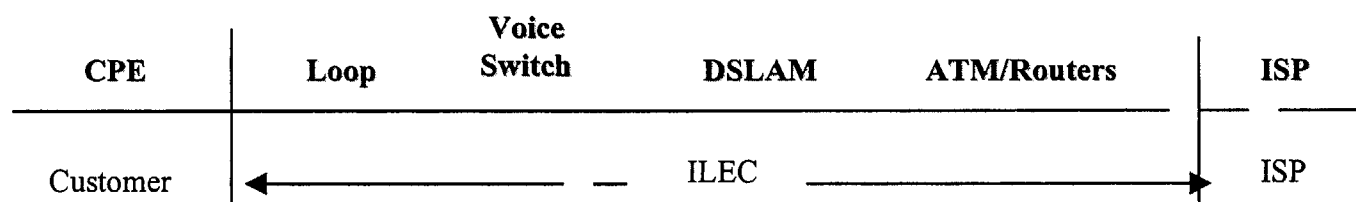
General Characteristics

- One carrier accountable for end-to-end ADSL service maintenance and repair
- One carrier controls all underlying network components for ADSL and voice services
- Repair procedures and test equipment, including trouble isolation procedures/equipment, would be managed by one carrier
- Evolving network/service/technology compatibility issues are the responsibility of one carrier

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Line Sharing

CPE	Loop	Voice Switch	DSLAM	ATM/Routers	ISP
Customer	ILEC/DLEC	ILEC	DLEC	ATM Provider	ISP
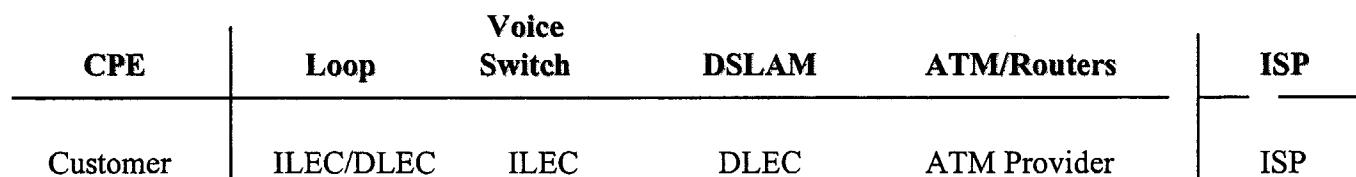
General Characteristics

- Three carriers accountable for end-to-end ADSL service maintenance and repair
- Three carriers control portions of the underlying network components for data service
- Trouble isolation would in many cases require involve two carriers, possibly three carriers
- Service and technology compatibility would be ongoing issues between the ILEC and DLEC

Timing

The proposed 2-4 Week Implementation Of Line Sharing is Unrealistic And Operationally Impossible

• Significant Departure From Existing BA's Service Offerings, Including BA's ADSL Volume Discount Offering

• Line Sharing Raises Customer Care Issues Which Must Be Carefully Considered And Addressed

• Traditional Service Development Process Must Be Followed To Avoid Service Disruption And To Provide For Efficient Provisioning

- Service Definition Is The Required First Step
- USOCs/FID/Service May Take Three Months or Longer
- Change Control Process Requires A Two Month Notice For LSR Changes
- Software Development And Deployment 6-9 Months
- Splitter Procurement And Deployment Will Take Time

• Overall Timeline Is Estimated To Be Not Less Than 9 to 12 Months After Firm Definition. Dependent On Y2K And Third Party Vendor Issues

Costing

Definitive Costs Estimates Will Require Further Service Definition And Analysis

- Offering And Service Architecture Not Fully Defined

- Multiple Approaches Are Possible

- Complexity Will Drive Costs
  - Strategic Plan Versus Immediate Need

- OSS Costs Alone Are Estimated At $5 To 25 Million Depending On The Scope Of The Requirement

BA Recommends That The Commission Adopt A Federal Level Technical Trial Approach

- Focus On Definition

- Evaluate Technical, Operational, And Service Quality Issues

- Cooperative Industry-Led Trials

  - Formulate Solutions/Timelines

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MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 1: **"No Way To Order Loop"** Assign codes (which does not involve OBF), use new paper form and manual fax procedures established for UNEs until OBF standardizes across ILECs. Then update GUI, EDI and fully implement.	Incremental rather than major new development. 1 to 2 weeks to modify forms and/or develop manual procedures.	Present to OBF; Update Web GUI in 3 months; Update EDI standard in 6 months; Fully implement EDI is less than 12 months.

Bell Atlantic Response
Agree that ordering/pre-ordering processes, forms and electronic interfaces need to be further developed. Manual workaround simply not feasible. In any case, ordering modifications would need to be made in sync with Line Sharing Service development effort which will take about 9 months.

MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 2: **" No Way To Provision Two Services On One Loop"** Train employees on applicability of existing ADSL inventory and assignment capabilities Line Sharing; assign new equipment codes if required, using existing process.	Immediate implementation with 1 to 2 weeks to train staff on use of existing process for CLEC-ILEC Line Sharing	Nothing Required

Bell Atlantic Response
Existing assignment systems (LFACS/SWITCH) cannot accommodate line sharing without enhancement to establish a Meet Point (CFA-like for splitter assignment and associated terminations) and leave voice line intact. MTG is incorrect that BA's LFACS enhancements can readily be accommodated for line sharing by simply assigning codes and employee training. Assigning codes in itself is an industry based process which may take several months. DAML technology cannot be used for line sharing without modification primarily because: (a) the DAML cannot be used to assign a digital loop, (b) the DAML creates two voice channels and is provisioned and inventoried through the normal POTS flow; and (c) there is no splitter involved with the DAML and no capability to pre-qualify facilities. Note: MTG states on page 36 that ILEC ADSL orders do not flow through. This is not true. BA ADSL orders can flow though BA's provisioning OSS.

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MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 3 : "No Way To Track Two Addresses, Customers, and Service Providers On One Loop" Address is same. Customer and service provider can be tracked and cross-referenced.	Immediately available by building on Work-Arounds in #1 and #2 above so requires 2 to 4 weeks cumulatively.	Small-may need to add field to house CLEC ID and new ID; driven by ILEC needs

Bell Atlantic Response

Without enhancement, as outlined in 1 and 2 above, BA provisioning systems cannot accommodate the additional points of termination that will be required for line sharing, to manage the splitter, and to leave the existing voice service intact. Currently, there is no way to assign a telephone number and a circuit number on one loop. The retail services that are currently in service, such as, ADSL, appear in the provisioning and assignment systems as one record in telephone number format. There is no provision to treat these single records as two records for provisioning or billing. System enhancements and new USOCs/FIDS would be required to facilitate the tying of the required voice and line sharing records together. Also, processes need to be developed to handle "pairing" issues, such as, what are the procedures and how are the appropriate OSSs updated when the BA voice service is terminated.

MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 4 "No Way To Notify Both CLEC And POTS Customer of Problem On Loop" Approaches detailed for issues 1, 2, 3 will support tracking customer info for reference	Immediate Work-Around available from activities 1 through 3- so within 2 to 4 weeks cumulatively for ILEC training	See 1, 2 and 3 above

Bell Atlantic Response

Approach for issues 1, 2 and 3 as proposed by MTG have nothing to do with the issue of notifying CLEC and POTS customers during maintenance and repair. Trouble report tracking OSSs and cooperative CLEC/ILEC M&Ps will need to be developed/modified to recognize that the loop for BA voice customer has line sharing applications and will require special handling for maintenance and repair.

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MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 5 "No Way To Perform Routine Automated Testing Without Disrupting Other Service" Notify customer of possible service disruption during testing; Provide physical testing access once splitter in place that is usable by CLEC OSS in one of ways suggested.	Immediate Work-Around since customer can be notified at time of shared sale.	OSS effort is low, process and procedures effort is medium once splitter available.
Bell Atlantic Response Part of development process addressed by #4. Splitter location, termination points, and CLEC testing access arrangements need to be identified as part of service definition. It is absolutely essential not to put the burden of repair coordination on the customer.		
MTG ILEC Concern # 6 "Shared Loops Will Create twice the number of trouble tickets" May be fewer tickets so not so clear if ILEC supposition is true. If so, existing ILEC OSS have ability to correlate duplicate related trouble tickets.	Nothing Required	Little or no impact.
Bell Atlantic Response Volume of trouble tickets not an issue. Currently no capability to track a circuit trouble ticket with a voice trouble ticket in trouble report systems. CLEC will be responsible for the line sharing testing and ILEC for the voice. Need to develop such a correlation.		

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MTG Proposed Approach	MTG Work-Around Effort /Timeline	MTG Formalization Effort/Timeline
MTG ILEC Concern # 7 **"Shared Loops Will Present Repair And Maintenance Problems"** New scenarios are similar to elements of other existing scenarios. Collaboratively revise existing processes and procedures.	Immediate collaborative revision as soon as logistics permit. No pre-requisites	Primarily a process and procedure issue, not an OSS functionality issue
Bell Atlantic Response Because at a minimum two carriers will be providing two different end-user services to the same end-user customer, report generation, tracking, testing and closeout will require cooperation between the ILEC and CLEC. In order to avoid finger pointing, well documented, proven processes and complementary OSS capabilities must be carefully developed. Existing OSS capabilities do not address this situation and need modification. Also, need to develop a way to identify POTS/line sharing loops to prevent them from being moved off of copper assignments.		
MTG ILEC Concern # 8 **"No Way To Bill Both Customers On One Loop"** Establish POTS customer with TN, CLEC customer with Ckt ID and cross-reference. May require new USOCs, codes, use of existing logic.	Immediate Work-Around with 3 to 4 weeks to assign new codes if required	Primarily uses existing capabilities, may vary by ILEC- but definitely minor not total re-do
Bell Atlantic Response MTG is correct that additional codes will be required to bill for line sharing. Billing OSS will need to be enhanced to generate bill to CLEC using these codes. Existing BA ADSL billing arrangement does not and can not accommodate CLEC use of loops.		